CLAIMS

What is claimed is:

1.   A method of producing a two-dimensional sensor array for imaging, said

method comprising the steps of:

5   determining a plurality of sensor positions, each position having a

spacing in a first axis from a datum point according to a first non-uniform

distribution schema, and each position having a spacing in a second axis from

said datum point according to a second non-uniform distribution schema;

providing a two-dimensional array of sensors, each sensor being

10   positioned on said array according to the determined positions in said first and

second axes; and

providing a means for sampling said sensors such that a

two-dimensional imaging sensor array having non-uniform sensor distribution

is realized.

15   2.   The method as set forth in Claim 1 wherein said first schema comprises a

pseudo-random schema.

3.   The method as set forth in Claim 1 wherein said first schema comprises a

nonlinear polynomial schema.

4.   The method as set forth in Claim 1 further comprising the step of assigning one

20   or more reference identifiers to said first and second non-uniform distribution

schema.

5.   The method as set forth in Claim 1 wherein said second schema comprises a

-20-

pseudo-random schema.

6.   The method as set forth in Claim 1 wherein said second schema comprises a

nonlinear polynomial schema.

7.   The method as set forth in Claim 1 further comprising the steps of:

5   creating a dithered set of data samples by sampling said sensors; and

performing interpolation to synthesize a set of data samples

representing uniformly spaced data samples from said dithered set of data

samples.

8.   The method as set forth in Claim 7 wherein said step of performing

10   interpolation to synthesize a set of data samples representing uniformly spaced

data samples comprises performing linear interpolation.

9.   A computer readable medium encoded with software for creating a synthesized

uniformly-spaced data set from a dithered data set in an imaging system,

said software when executed by a processor causing the processor to perform

15   the steps of:

receiving a dithered set of data samples; and

performing interpolation to synthesize a set of data samples

representing uniformly spaced data samples from said dithered set of data

samples.

20   10.   The computer readable medium as set forth in Claim 9 wherein said

software for performing interpolation comprises software for performing

linear interpolation.

11.   The computer readable medium as set forth in Claim 9 further comprising

        software for performing the step of receiving a reference identifier associated

        with distribution schema of said dithered data set, and wherein said software

        for performing interpolation comprises software for performing interpolation

5   based upon said distribution schema.

12.   A digital imaging system comprising:

                a sensor array means, said sensor array having a set of sensors

        arranged in first axis in a non-uniform manner according to a first schema and

        in a second axis in a non-uniform manner according to a second schema;

10   a sampling means for sampling said sensors; and

                a dithered data set creation means for storing data samples from said

        sampling means.

13.   The digital imaging system as set forth in Claim 12 wherein said sensors of said

        sensor array means are arranged in said first axis according to a

15   pseudo-random schema.

14.   The digital imaging system as set forth in Claim 12 wherein said sensors of said

        sensor array means are arranged in said first axis according to a nonlinear

        polynomial schema.

16.   The digital imaging system as set forth in Claim 12 wherein said sensors of said

20   sensor array means are arranged in said second axis according to a

        pseudo-random schema.

17.   The digital imaging system as set forth in Claim 12 wherein said sensors of said

sensor array means are arranged in said second axis according to a

polynomial schema.

18.   The digital imaging system as set forth in Claim 12 further comprising an

interpolation means for synthesizing a uniformly-spaced data sample set from

5   said dithered data sample set.

19.   The digital imaging system as set forth in Claim 18 wherein said interpolation

means comprises a linear interpolation means.

20.   The digital imaging system as set forth in Claim 18 further comprising a

means for receiving an reference identifier associated with said first and

10   second distribution schema and selecting an interpolation means according

to said first and second distribution schema.